

Name: _____

Math Inverses

- 1) What is the inverse of the function $y - 2 = 7x$?
- A) $y = 7x - 2$ B) $y = \frac{x-2}{7}$ C) $y = \frac{2-x}{7}$ D) $y = \frac{2x}{7}$
- 2) The graph of any function and the graph of its inverse are symmetric with respect to the
- A) y-axis C) graph of the equation $y = -x$
B) x-axis D) graph of the equation $y = x$

Questions 3 through 5 refer to the following:

For the given relation(s),

- (a) state the inverse.
(b) state whether or not the inverse is a function. [Justify your answer.]

- 3) $\{(x,y) \mid y = x - 2\}$
- 4) $\{(x,y) \mid y = -4\}$
- 5) $\{(3,2), (4,3), (5,8), (6,-1)\}$

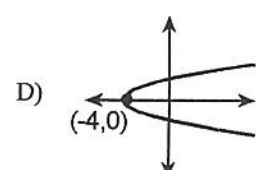
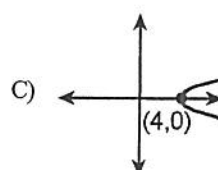
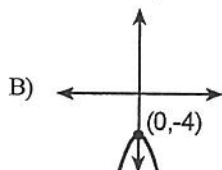
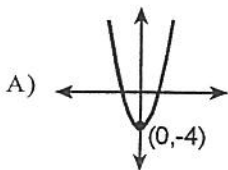
- 6) What is the inverse of the equation $y = 3x - 2$?
- A) $y = x$ B) $y = 2x - 3$ C) $y = \frac{x+2}{3}$ D) $y = 3x + 2$
- 7) Given: set $A = \{(1,2), (2,3), (3,4), (4,5)\}$

If the inverse of the set is A^{-1} , which statement is true?

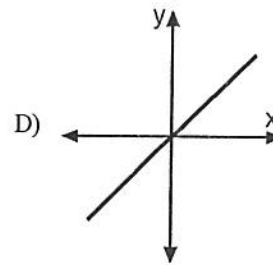
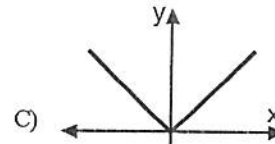
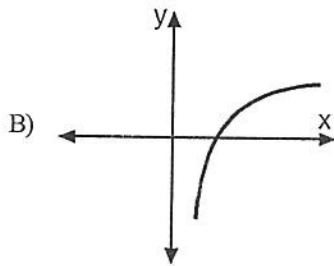
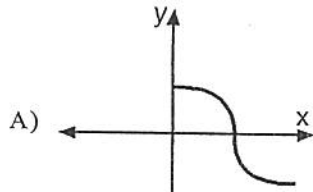
- A) A and A^{-1} are functions.
B) A and A^{-1} are not functions.
C) A is a function and A^{-1} is not a function.
D) A is not a function and A^{-1} is a function.
- 8) Write the inverse of the given function:

$$\{(a,b), (c,d), (e,f), (g,h)\}$$

- 9) Which of the following graphs is the inverse of $y = x^2 - 4$?



10) Which function is *not* one to one?



11) By which transformation can the set representing the inverse of a function be found?

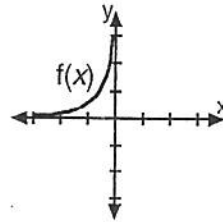
A) reflection in the line $y = x$

C) reflection in the origin

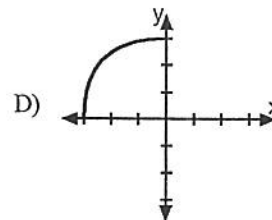
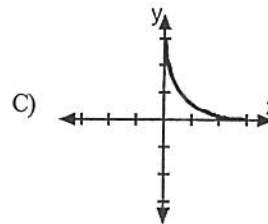
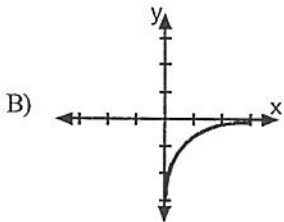
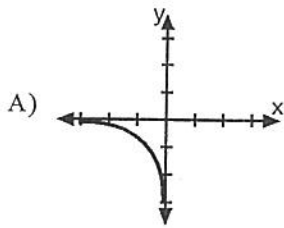
B) reflection in the y-axis

D) rotation of 90° about the origin

12) The accompanying diagram represents the graph of $f(x)$.



Which graph below represents $f^{-1}(x)$?



13) If $(-3, 1)$ is in the function $f(x)$, which of the following points will be in the function $f^{-1}(x)$?

A) $(3, -1)$

B) $(-1, 3)$

C) $(3, 1)$

D) $(1, -3)$

14) Graph $f(x) = \frac{1}{2}x^2$ and $f^{-1}(x)$ over the interval $0 \leq x \leq 4$ and state the coordinates of the points of intersection.

Name: _____

Math Classification of Functions

- 1) How many of the following functions are linear?

$$f(x) = |x - 4|$$

$$f(x) = 2x + 7$$

$$f(x) = x - 1$$

$$f(x) = \sqrt{x - 4}$$

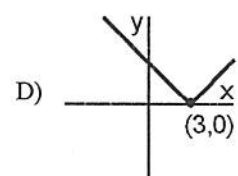
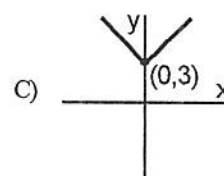
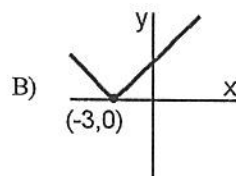
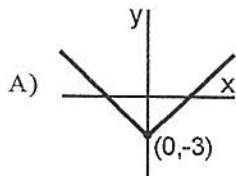
A) 1

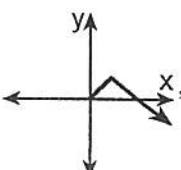
B) 2

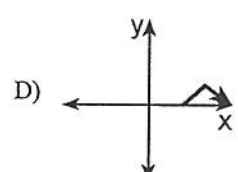
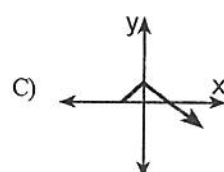
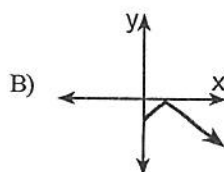
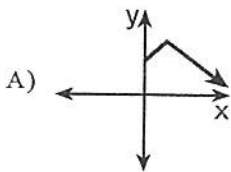
C) 3

D) 4

- 2) Which of the following diagrams is a reasonable graph of $y = |x| - 3$?



- 3) If the graph of $f(x)$ is , which of the following is the graph of $f(x) - 1$?



- 4) Which of the following equations represents a constant function?

A) $y = -5x^2$

B) $y = 5x$

C) $y = 5$

D) $y = x$

- 5) Which of the following is a linear function?

A) $y = 2x$

B) $y = 2^x$

C) $y = \log_2 x$

D) $y = x^2$

- 6) Which of the following functions is *not* linear?

(A) $2x + 3y = 6$

(B) $y = 6$

(C) $y = 2x^2$

(D) $y = 2x + 1$

A) A

B) B

C) C

D) D

- 7) Which of the following functions is linear?

(A) $f(x) = x^2 - 2x$

(B) $f(x) = x - 2$

(C) $f(x) = \sqrt{x - 2}$

(D) $f(x) = |x - 2|$

A) A

B) B

C) C

D) D

- 8) How many of the following functions are linear?

$$f(x) = 2x$$

$$f(x) = x + 3$$

$$f(x) = x^2 + 2x - 5$$

$$f(x) = \sqrt{x - 3}$$

A) 1

B) 2

C) 3

D) 4

- 9) Which of the following is *not* a linear function?

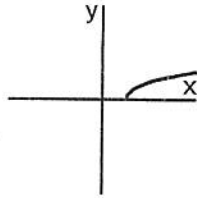
A) $x = 8$

B) $2x + 3y = 6$

C) $y = -2x - 1$

D) $y = 8$

- 10) Which of the following equations would produce a graph with the general shape and position of the graph below?



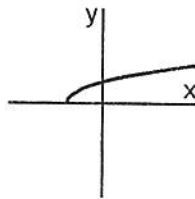
A) $y = \sqrt{2 - x}$

B) $y = -\sqrt{x - 2}$

C) $y = \sqrt{x - 2}$

D) $y = -\sqrt{2 - x}$

- 11) Which of the following equations would produce a graph with the general shape and position of the graph below?



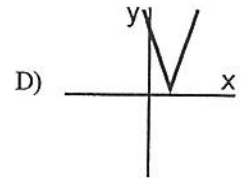
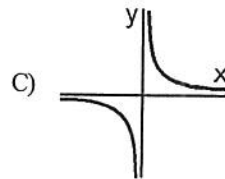
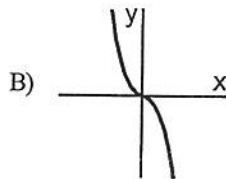
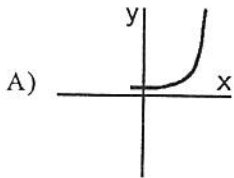
A) $y = \sqrt{x - 3}$

B) $y = -\sqrt{x - 3}$

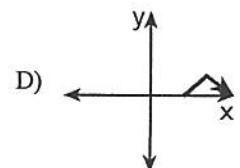
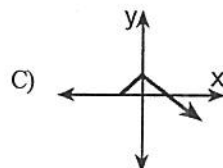
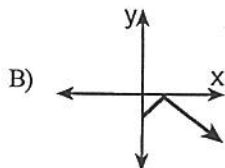
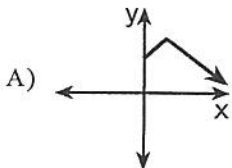
C) $y = -\sqrt{x + 3}$

D) $y = \sqrt{x + 3}$

- 12) Which of the following is the graph of an absolute value function?



- 13) If the graph of $f(x)$ is , which of the following is the graph of $f(x + 1)$?



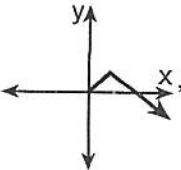
- 14) Which of the following equations represents a constant function?

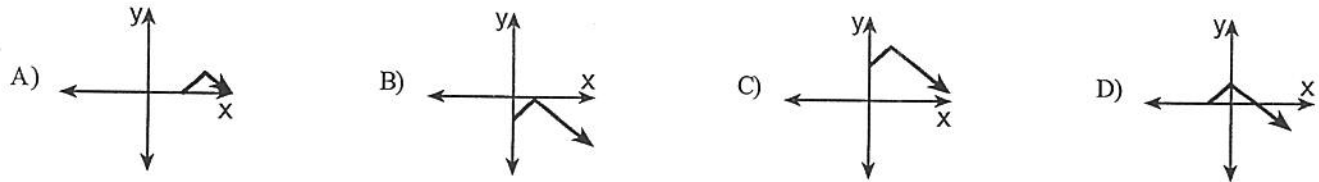
A) $y = 3x^2$

B) $y = 3$

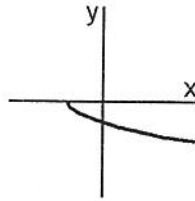
C) $y = x$

D) $y = 3x$

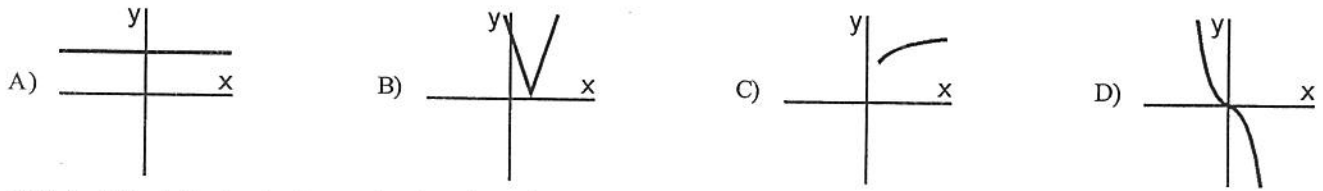
- 15) If the graph of $f(x)$ is , which of the following is the graph of $f(x - 1)$?



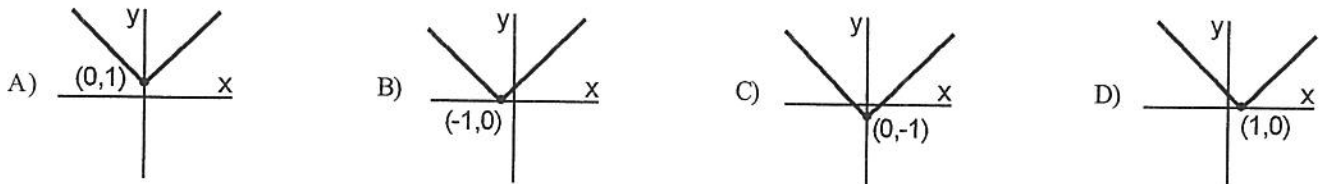
- 16) Which of the following equations would produce a graph with the general shape and position of the graph below?



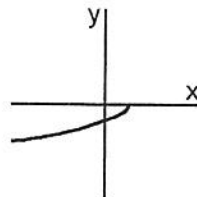
- A) $y = \sqrt{x-3}$ B) $y = -\sqrt{x-3}$ C) $y = \sqrt{x+3}$ D) $y = -\sqrt{x+3}$
- 17) Which of the following is the graph of a function involving a square root?

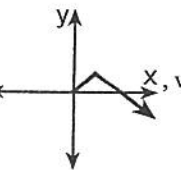


- 18) Which of the following is the graph of $y = |x - 1|$?



- 19) Which of the following equations would produce a graph with the general shape and position of the graph below?



- A) $y = -\sqrt{x-2}$ B) $y = -\sqrt{2-x}$ C) $y = \sqrt{2-x}$ D) $y = \sqrt{x-2}$
- 20) If the graph of $f(x)$ is , which of the following is the graph of $f(x) + 1$?



21) How many of the following functions are constant?

$$f(x) = 2x$$

$$f(x) = x + 3$$

$$f(x) = x^2 + 2x - 5$$

$$f(x) = \sqrt{x - 3}$$

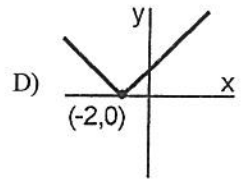
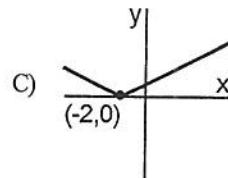
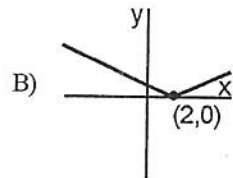
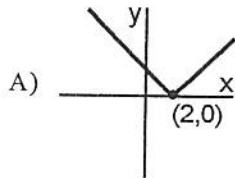
A) 1

B) 2

C) 3

D) 0

22) Which of the following is the graph of $y = |x + 2|$?



23) Which of the following is the graph of $y = |x| + 1$?

